Variable intensity sampling: developing operational plans for the green rice leafhopper in wet paddy ecosystem in Malaysia

ABSTRACT

A relatively new sampling scheme called the variable intensity sampling (VIS) has been proposed for a rice pest, the green leafhopper (GLH),Nephotettix spp. Taylorôs Power Law (TPL) coefficients a and b were used in developing the VIS plan. Population density estimations and decision making attributes were derived from data obtained from four experimental plots at Universiti Putra Malaysia for a sampling period of 73 days. Four sampling occasions were chosen for analysis. The data fit well the TPL and are represented as lns2 = 0.24 + 1.30lnxï (s2 = variance, xï = mean density). A precision level of 0.25 and an economic threshold of 2 hoppers/hill were selected in developing this plan. The average sample number required in VIS ranged from 13 to 48. The VIS-TABLE for sampling and the VIS-CHART for determining the required sample size for GLH are presented.

Keyword: Green leafhopper; Rice; Sample plan; VIS; Taylor's coefficients; Malaysia